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Claims

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- 1. A water-dispersible and substantially non-combustible liquid vitamin composition comprising:
- a) from 10% to 60% by weight of a vitamin component selected from the group consisting of:
 - (i) one or more precursors of Vitamin A;
 - (ii) one or more precursors of Vitamin E;
 - (iii) a mixture of one or more precursors of Vitamin A and one or more

precursors of Vitamin E;

- (iv) a mixture of one or more precursors of Vitamin A and Vitamin D3;
- (v) a mixture of one or more precursors of Vitamin E and Vitamin D3; and
- (vi) a mixture of one or more precursors of Vitamin A, one or more

precursors of Vitamin E, and Vitamin D3;

-b) from 2% to 15% by weight of a C4 to C6 alkyl lactate;

- c) from 20% to 50% by weight of one or more veterinarily acceptable emulsifiers;
- d) from 1% to 15% by weight of water; and
- e) from 2% to 10% of an oil

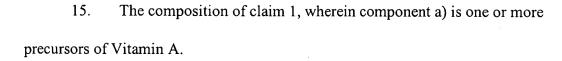
wherein the flashpoint of the composition is about 200°F or greater.

- 2. The composition of Claim 1, wherein said composition further comprises from 1% to 15% by weight of a veterinarily acceptable stabilizer.
 - 3. The composition of Claim 2, wherein the stabilizer is propylene glycol.

- 4. The composition of claim 1, wherein the amount of the alkyl lactate is from 4% to 7%.
 - 5. The composition of claim 1, wherein the composition is substantially free f a flammable alcohol.
- 6. The composition of Claim 1, wherein the ratio of b) to d) is from 1:5 to 10:1.
- 7. The composition of claim 1, wherein the emulsifier is a non-ionic surfactant.
- 8. The composition of claim 1, further comprising from 0.5% to 6% by weight of an antioxidant.
 - 9. The composition of claim 8, wherein the antioxidant is ethoxyquin, BHT or BHA.
 - 10. The composition of claim 9, wherein the antioxidant is ethoxyquin.
- 11. The composition of claim 1, wherein the viscosity of the composition is from 1000 cP to 10000 cP at 0°C.
 - 12. The composition of claim 1, wherein the viscosity of the composition is from 100 cP to 2000 cP at 15°C.
- 13. The composition of claim 1, wherein said composition adequately disperses into water within 2 minutes when added at a ratio of composition to water of from 1 g/kg to 50 g/kg.
 - 14. The composition of claim 1, wherein the amount of water is from 1% to 5% by weight.

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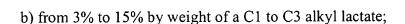


- 16. The composition of claim 1, wherein component a) is one or more precursors of Vitamin E
- The composition of claim 1, wherein component a) comprises a precursor of Vitamin A and Vitamin D3 and the weight/weight ratio of the precursor of Vitamin A to Vitamin D3 is from 100:1 to 40:1.
 - 18. The composition of claim 15, wherein the total amount of the one or more precursors of Vitamin A in the composition is from 15 to 50% by weight.
 - 19. The composition of claim 16, wherein the total amount of the one or more precursors of Vitamin E in the composition is from 10 to 60% by weight.
 - 20. A water-dispersible and substantially non-combustible liquid vitamin composition comprising:
 - a) from 10% to 60% by weight of a vitamin component selected from the group
- 15 consisting of:
- (i) one or more precursors of Vitamin A;
- (ii) one or more precursors of Vitamin E;
- (iii) a mixture of one or more precursors of Vitamin A and one or more

precursors of Vitamin E;

- (iv) a mixture of one or more precursors of Vitamin A and Vitamin D3;
- (v) a mixture of one or more precursors of Vitamin E and Vitamin D3; and
- (vi) a mixture of one or more precursors of Vitamin A, one or more precursors of Vitamin E, and Vitamin D3;

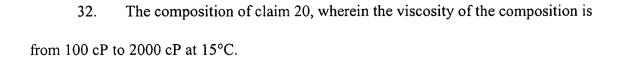
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- c) from 20% to 50% by weight of one or more veterinarily acceptable emulsifiers;
- d) from 3% to 15% by weight of water; and
- e) from 2% to 10% of an oil;
- wherein the flashpoint of the composition is about 200°F or greater.
 - 21. The composition of claim 20, wherein said composition further comprises from 1% to 15% by weight of a veterinarily acceptable stabilizer.
 - 22. The composition of claim 21, wherein the stabilizer is propylene glycol.
 - 28. The composition of claim 24, wherein the amount of the C1-C3 alkyl

Yactate is from 3% to 12%.

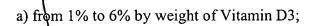
- 24. The composition of claim 20, wherein the composition is substantially free of a mono-hydrox alcohol.
- 25. The composition of Claim 20, wherein the ratio of b) to d) is from 1:5 to 4:1.
- 26. The composition of claim 20, wherein the emulsifier is a non-ionic surfactant.
- 27. The composition of claim 20, further comprising from 0.5% to 6% by weight of an antioxidant.
- 29. The composition of claim 27, wherein the antioxidant is ethoxyquin, BHT or BHA.
 - 30. The composition of claim 29, wherein the antioxidant is ethoxyquin.
 - The composition of claim 22, wherein the viscosity of the composition is 000 cP to 10000 cP at 0°C.



33. The composition of claim 20, wherein said composition adequately disperses into water within 2 minutes when added at a ratio of composition to water of from 1 g/kg to \$0 g/kg.

- 34. The composition of claim 20, wherein the amount of water is from 3% to 6% by weight.
- 35. The composition of claim 20, wherein component a) is one or more precursors of Vitamin A.
 - 36. The composition of claim 20, wherein component a) is one or more precursors of Vitamin E.
 - 37. The composition of claim 20, wherein component a) comprises a precursor of Vitamin A and Vitamin D3 and the weight/weight ratio of the precursor of Vitamin A to Vitamin D3 is from 100:1 to 40:1.
 - 38. The composition of claim 35, wherein the total amount of the one or more precursors of Vitamin A in the composition is from 15 to 50% by weight.
 - 39. The composition of claim 36, wherein the total amount of the one or more precursors of Vitamin E in the composition is from 10% to 30% by weight.
- 20 40. The composition of claim 1, further comprising a fungicide.
 - 41. The composition of claim 20, further comprising a fungicide.

A water-dispersible and substantially non-combustible liquid vitamin aposition comprising:



- b) from 2% to 15% by weight of a C4 to C6 alkyl lactate;
- c) from 20% to 50% by weight of one or more veterinarily acceptable emulsifiers;
- d) from 1% to 15% by weight of water; and
- e) from 5% to 30% by weight of an oil;

wherein the flashpoint of the composition is about 200°F or greater.

43. A water-dispersible and substantially non-combustible liquid vitamin

composition comprising:

- a) from 1% to 6% by weight of Vitamin D3:
- b) from 3% to 15% by weight of a C1 to C3 alkyl lactate;
- c) from 20% to 50% by weight of one or more veterinarily acceptable emulsifiers;
- d) from 1% to 15% by weight of water; and
- e) from 5% to 30% by weight of an oil;

wherein the flashpoint of the composition is about 200°F or greater.

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